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08/892,902 07/14/97 WALLER

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EXAMINER

IM71/0426

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ART UNIT

PAPER NUMBER

1774

DATE MAILED:

04/26/99

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

MEY
04/21/99

Office Action Summary

Application No.
08/892,902

Applicant(s)
Clinton P. WALLER Jr. et al.

Examiner
M. Yamnitzky

Group Art Unit
1774



☐ Responsive to communication(s) filed on _____

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire three (3) month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) 1-20 is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1-20 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☒ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been
☐ received.

☐ received in Application No. (Series Code/Serial Number) _____

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 2-5

☐ Interview Summary, PTO-413

☒ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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1. The drawings are considered to be informal because they fail to comply with 37 CFR 1.84(a)(1) which requires black and white drawings using India ink or its equivalent.

Photographs and color drawings are acceptable only for examination purposes unless a petition filed under 37 CFR 1.84(a)(2) or (b)(1) is granted permitting their use as formal drawings. In the event applicant wishes to use the drawings currently on file as formal drawings, a petition must be filed for acceptance of the photographs or color drawings as formal drawings. Any such petition must be accompanied by the appropriate fee as set forth in 37 CFR 1.17(i), three sets of drawings or photographs, as appropriate, and, if filed under the provisions of 37 CFR 1.84(a)(2), an amendment to the first paragraph of the brief description of the drawings section of the specification which states:

The file of this patent contains at least one drawing executed in color. Copies of this patent with color drawing(s) will be provided by the Patent and Trademark Office upon request and payment of the necessary fee.

Color photographs will be accepted if the conditions for accepting color drawings have been satisfied.

2. The disclosure is objected to because of the following informalities: Updated information is necessary regarding the copending applications which are cited on pages 1, 15 and 18 for which no application number is provided.

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3. Claims 1, 6, 7, 10, 11 and 18 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for an ink receptor medium having a pigment management system comprising functionalized particulates, the functionalized particulates being capable of interacting with dispersants engaged with pigment particles in an ink, or an ink receptor medium having a pigment management system comprising a functionalized coating, the functionalized coating being capable of interacting with dispersants engaged with pigment particles in an ink, does not reasonably provide enablement for an ink receptor medium having a pigment management system, in general. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims.

The only pigment management systems disclosed in the present specification are systems comprising functionalized particulates or a functionalized coating, wherein the particulates or coating interact with dispersants in a pigment-containing ink used to print on the receptor medium.

4. Claims 2-5 and 7-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The limitations imposed by claim 2's recitation of functionalized particulates "that chemically interact with pigment particles through interaction with dispersants engaged with the

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pigment particles” are not clear since claim 2 is directed to a inkjet receptor medium, not to a method of printing such a medium, and not to a printed medium. The medium is not limited to a medium which is printed with an ink comprising pigment particles and dispersants. Similarly, the limitations imposed by recitations in various other inkjet receptor medium claims of chemical interaction with pigment particles and/or interaction with dispersants are not clear since the claimed medium is not required to be printed with an ink comprising pigment particles and dispersants.

The limitations imposed by the requirement of claims 7-9 and 12-14 for a surfactant “that carries away an ink passing through the substrate except for pigment particles in the ink” are not clear since these claims are directed to the medium, and the medium need not be printed with an ink comprising pigment particles.

Antecedent basis is lacking for “the microporous substrate” as recited in claim 10, with claim 11 dependent therefrom. Claim 1, from which claim 10 depends, does not require that the “porous” substrate be “microporous”.

The term “long” is indefinite. The scope of a “long-chain” fatty acid as required by claim 14 is not clear.

There is no antecedent basis for “the salts” as recited in claim 15. Claim 15 depends from claim 9 which depends from claim 3 which depends from claim 1. None of claims 1, 3 or 9 set forth “salts”.

The scope of “pseudo-halides” (recited in claim 15) is not known.

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There is no antecedent basis for “the pigment particles” as recited in line 7 of claim 16 or for “the surfaces” as recited in line 8 of claim 16.

Step (b) of claim 16 is confusing in reciting “imbibing the pigment management system into pores” and then reciting that the pigment management system is selected from a group which includes “functionalized particulates within the pores” and a functionalized coating “along the surfaces”. It is not clear how something which is already “within the pores” can be imbibed into the pores. It is not clear how something which is already “along the surfaces” (if “the surfaces” refers to surfaces of the pores) can be imbibed into the pores.

The limitations imposed by claim 16’s requirement for functionalized particulates that chemically interact with pigment particles through interaction with dispersants, or a functionalized coating that chemically interacts with pigment particles through interaction with dispersants, are not clear because claim 16, with claim 17 dependent therefrom, is directed to a method of making an inkjet receptor medium, not to a method of printing. The inkjet receptor medium made according to the method of claims 16 and 17 need not be printed with an ink comprising pigment particles and dispersants.

The inkjet ink recited in line 5 of claim 18, with claims 19 and 20 dependent therefrom, is not explicitly limited to an inkjet ink comprising pigment particles and dispersants. Accordingly, it is not clear whether the pigment particles which are agglomerated (claim 18)/chemically interacted with (claims 19 and 20), and the dispersants which are interacted with (claims 19 and 20) are necessarily from the inkjet ink.

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5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

6. Claims 1, 3, 4, 6, 7, 9, 15-18 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Cousin et al. (4,554,181).

Cousin et al. disclose an ink jet recording sheet comprising a porous substrate and a polyvalent metal salt. To enhance water absorbancy, "high absorbancy pigments" may also be included in the ink jet recording sheet. Cousin et al. also teach that cationic or non-ionic surfactants may be included in the recording surface so as to increase the speed with which the ink wets the surface, and enhance rapidity of set and enhance absorption. For example, see column 2, lines 38-51, c. 5, l. 30-31 and 46-63, c. 6, l. 12-28, and c. 8, l. 26-36.

The pores of the prior art porous substrate constitute a fluid management system. The "high absorbancy pigments" constitute a fluid management system. The surfactants included in the recording surface also constitute a fluid management system. The polyvalent metal salt is inherently in contact with surfaces of the pores of the substrate, and meets the requirement for a pigment management system comprising a functionalized coating. The language of some of the present claims regarding chemical interaction with pigment particles and interaction with

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dispersants is interpreted, for purposes of the prior art rejection, as a "capable of" statement directed to the intended use of printing with a pigment-containing ink. The polyvalent metal salt of the prior art is capable of interacting in the manner set forth in the present claims.

The recording sheet disclosed by Cousin et al. is printed using ink jet ink. Claims 18 and 20 are considered to be anticipated by the prior art subject to clarification as to whether the ink jet ink used according to claim 18, and claims dependent therefrom, is actually required to comprise pigment particles.

7. Claims 1, 3, 4, 6, 16, 18 and 20 are rejected under 35 U.S.C. 102(e) as being anticipated by Davis et al. (5,695,820; filed 06/20/96).

Davis et al. disclose applying a treating solution to an ink jet printing medium prior to printing with a pigment-containing ink jet ink. The treating solution comprises a precipitating agent which is a multi-valent metal salt and functions to precipitate the pigment from the ink. For example, see column 1, line 66 to c. 2, l. 11, c. 2, l. 61 to c. 3, l. 15, c. 3, l. 39-44, c. 3, l. 66 to c. 4, l. 38, c. 4, l. 65 to c. 5, l. 3, c. 5, l. 30-48, c. 9, l. 14-21. Porosity of a substrate, wherein the porosity constitutes a fluid management system, is considered to be inherent in the prior art's disclosure of using paper. The treating solution inherently provides a coating along surfaces of pores of the substrate.

With respect to the present claim requirement for a porous substrate having a fluid management system, the examiner notes that any coating applied to a paper substrate which

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functions to absorb fluid or otherwise "manage" fluid meets the requirements of the broadest claims for a "fluid management system" since the present claims do not exclude coatings.

(Although the present specification states at page 7, lines 1-2 that the art needs a receptor that does not require coating layers, all of the working examples apply the pigment management system and fluid management systems by coating a composition onto the substrate.)

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 10-14, 18 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cousin et al. (4,554,181) as applied above and for the further reasons set forth below.

The disclosure of the patent to Cousin et al. is as set forth in the rejection under 35 U.S.C. 102(b).

Cousin et al. teach that the substrate may be made from paper, synthetic paper, or plastic film. Cousin et al. do not specifically disclose a microporous polypropylene film as required by present claims 10 and 11. It would have been within the general skill of a worker in the art at the time of the invention to select a suitable porous substrate based on the properties that a particular porous substrate would lend to the final product.

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Cousin et al. teach that surfactants may be included, but do not specifically disclose the surfactants recited in present claims 12-14. Absent a showing of criticality for a particular surfactant, it is the examiner's position that it would have been within the general skill of a worker in the art to select a surfactant within the scope of the subspecies of cationic and non-ionic surfactants, as taught by the prior art, from known commercially-available surfactants. There is no suggestion in the present specification that the surfactants used in the present invention are not known commercially-available surfactants.

Cousin et al. do not disclose printing an image using an inkjet ink comprising pigment particles. Since pigment-containing ink jet inks are known, it would have been an obvious modification to one of skill in the art at the time of the invention to print an image on the prior art ink jet recording sheet by using a pigment-containing ink jet ink. The pigment particles in the ink would inherently be agglomerated by the polyvalent metal salt in the prior art recording sheet.

10. Miscellaneous: In the third line of claim 15, "abovein" should read --above in--.

11. The examiner acknowledges applicants' disclosure of five copending applications. Two of those applications have since issued as patents; the patents are made of record via the attached PTO-892. The other three copending applications have been considered.

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Applicants should receive copies of five form PTO-1449s with this action. On the form received by the PTO on 10/30/98, the two U.S. patents have been crossed off because they are made of record via one of the forms received 12/04/97.

12. The prior art made of record and not relied upon is considered pertinent to applicants' disclosure.

Shields et al. (5,428,383) discloses the use of a multi-valent metal salt as a precipitating agent for pigment. For example, see c. 3, l. 15-49 and c. 10, l. 17-49.

Iqbal et al. (5,707,722) and Warner et al. (5,747,148) correspond to two of the five copending applications disclosed by applicants.

A search of the prior art did not find any references disclosing or suggesting an inkjet receptor medium comprising a porous substrate and fluorinated silica agglomerates that are capable of agglomerating pigment particles in an pigment-containing ink used to print the receptor medium, or a method of making or using such an inkjet receptor medium.

13. Any inquiry concerning this communication should be directed to Marie R. Yamnitzky at telephone number (703) 308-4413. The examiner can generally be reached at this number from 6:45 a.m. to 3:15 p.m. Monday-Friday.

The current fax numbers for Art Unit 1774 are (703) 305-3599 for official after final faxes and (703) 305-5408 for all other official faxes. (Unofficial faxes for Art Unit 1774 can be sent to (703) 305-5436.)

MRY
04/21/99



MARIE YAMNITZKY
PRIMARY EXAMINER

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